2000-432928/38 A60 D21 E14 F06 (E13 E24) **WELA 1998.12.15**

WELLA AG *EP 1010419-A2

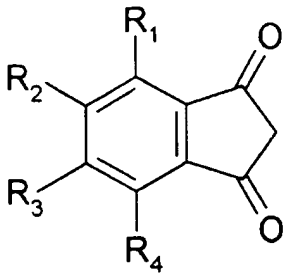
1998.12.15 1998-1057847(+1998DE-1057847) *(2000.06.21)* A61K 7/13

Composition for dyeing fibers, especially human hair, containing 1,3-indanedione derivative and aromatic amine, giving strong, fast colors under mild conditions (Ger)

C2000-131695 R(AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI)

Addnl. Data: GOETTEL O, METTLER S, HAYOZ A, PIRRELLO A 1999.10.15 1999EP-120500

A(8-E3, 12-S5N, 12-S5P) D(8-B6) E(6-A2E, 6-A3, 6-D1, 6-E2, 7-D4C, 7-D8, 7-D12, 8-C2, 8-D3, 10-B1A, 10-B2A, 10-B3A, 10-B4A2, 10-C2B, 10-C2C2, 10-C3, 10-C4B, 10-D3A, 10-D3D, 10-E2U, 10-F2A1, 10-J2B4, 26-A3, 26-C) F(3-F2, 3-F3, 3-F4, 3-F6, 3-F7, 3-F9, 3-F10, 3-F21, 3-F22, 3-F33)



(I)

R_1-R_4 = H, halo, NO_2, NH_2, NHCOMe, OH, OCOMe, Me, Et, 1-9C alkoxy, benzyloxy (optionally substituted by Me, OMe or halo), 2-8C mono- or diolefin residue linked via O, 1,3-indanedion-5-yl, Ph, COOH, $CONH_2$, (1-7C) carboxylic acid ester residue or phenoxypropoxy;

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NOVELTY

A composition for dyeing fibers contains:
(a) at least one 1,3-indanedione derivative and
(b) at least one aromatic amine.

DETAILED DESCRIPTION

A composition for dyeing fibers contains:
(a) at least one indanedione derivative of formula (I); and
(b) at least one aromatic amine (II).

or $R_1 + R_2$ or $R_2 + R_3$ = 5-6C alkylene, OCH_2O, OCH_2CH_2O or a group completing a fused benzo- or naphtho-aromatic system (optionally substituted by halo, OH, OMe or OEt);
or $R_2 + R_3$ = $-COCH_2CO-$.

An INDEPENDENT CLAIM is included for a dyeing method involving applying the above composition to fibers, rinsing with water after 10-30 minutes, optionally washing using shampoo and/or further rinsing using an aqueous solution of a weak organic acid and drying.

USE

The composition is especially used for dyeing keratin fibers, particularly human hair, but more generally may be used for dyeing natural fibers (e.g. wool, cotton, jute, sisal, linen or silk), modified natural fibers (e.g. regenerated cellulose, nitrocellulose, alkyl cellulose, hydroxyalkyl cellulose or acetylcellulose) or synthetic fibers (e.g. polyamide, polyurethane or polyester).

ADVANTAGE

Strong, bright, fast, long-lasting dyeings in a wide range of colors (e.g. natural colors or fashionable bright colors such as red) can be obtained under mild conditions. Dyeing is carried out without use of oxidizing agents and approximately neutral pH, i.e. under conditions causing no damage to human hair or skin. Color intensities are comparable with those obtained using oxidative dyeing systems.

SPECIFIC COMPOUNDS

5 Compounds (I) are specified in the claims, i.e. 1,3-indanedione, 4- or 5-nitro-1,3-indanedione, 5,6-dichloro-1,3-indanedione and 4,5,6,7-tetrachloro-1,3-indanedione.

EXAMPLE

A 2-component dye system comprised (i) 10 g ethanol, 0.1 g sodium lauryl ether sulfate (28% aqueous solution), 10 mmol 1,3-indanedione and deionized water to 50 g and (ii) 10 g ethanol, 10 mmol p-phenylene diamine and deionized water to 100 g. Immediately before use these components were mixed to give a dyeing composition of pH 5.5. This was applied to bleached hair. After 30 minutes at 40°C the hair was rinsed with water, shampooed and dried. A very strong red-brown dyeing was obtained.

DEFINITIONS

Preferred Definitions:

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R_1-R_4 = H, halo, NO_2, NH_2, OH, Me, 1-3C alkoxy, benzyloxy (optionally substituted by Me or OMe) or $CONH_2$;
or $R_1 + R_2$ or $R_2 + R_3$ = OCH_2O or OCH_2CH_2O.

TECHNOLOGY FOCUS

Organic Chemistry - Preferred Composition; (II) is selected from p- or m-phenylene diamine derivatives, p- or m-aminophenol derivatives, pyridines, pyrimidines, pyrimidones, pyrazoles, naphthols, naphthalenes, indoles, 3,4-methylenedioxy-benzenes, benzoxazines and indolinediones. The composition contains 0.01-5 wt. % of each of (I) and (II); and has pH 3-12.

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